(12) UK Patent Application (19) GB (11) 2 274 349 (13) A

(54) Retailing system

(57) The retailing system 10 intended to reward purchases for loyalty uses tokens 12 which represent a single purchaser. Storage means on the token 12, such as a magnetic stripe, store accumulated data derived from transactions executed by the purchaser. A terminal 14 has a read/write head 20 which can read the token 12 to identify the purchaser and can obtain information, such as from an EPOS syste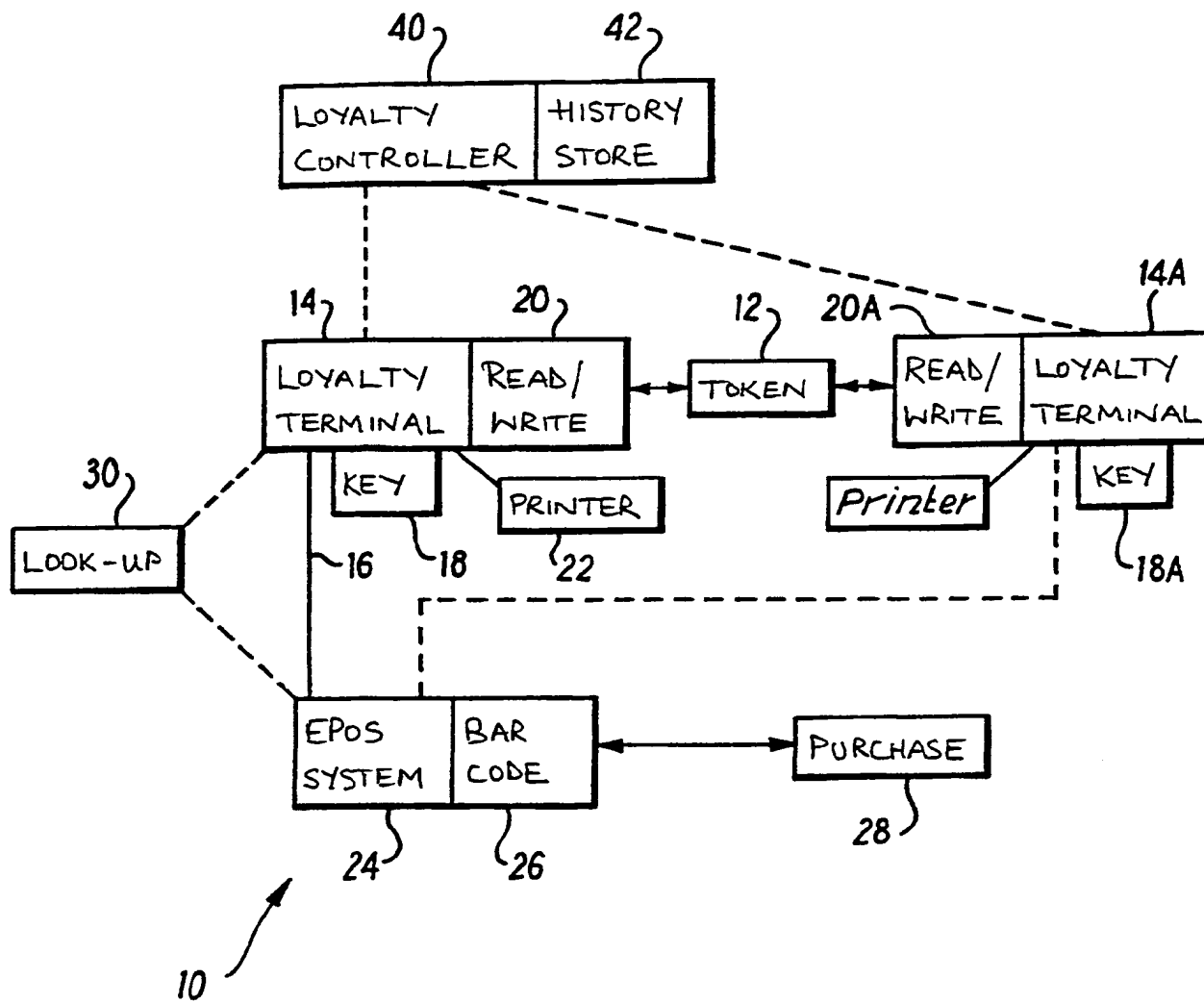m to determine how identifying data is to be modified in accordance with a transaction being executed by the purchaser. The accumulated data may be used to reward a purchaser with discounts or a refund.

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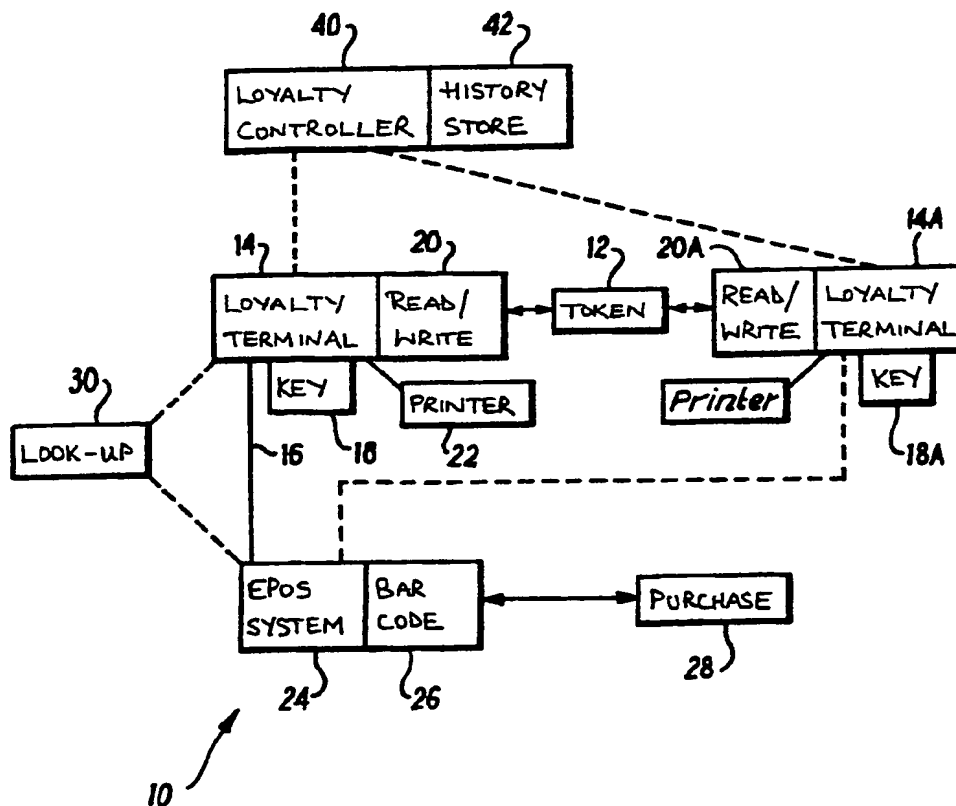
At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

LOYALTY CONTROLLER	HISTORY STORE

40, 42

14, 20, 12, 20A, 14A

LOYALTY TERMINAL	READ/ WRITE

TOKEN

READ/ WRITE	LOYALTY TERMINAL

KEY

PRINTER

Printer

KEY

30

LOOK-UP

16, 18, 22

18A

EPOS SYSTEM	BAR CODE

PURCHASE

24, 26

28

10

Retailing Syste

The present invention relates to a retailing system
and particularly, but not exclusively, to the type of
system commonly known as a "loyalty" scheme.

A loyalty scheme is a marketing technique in which
purchasers obtain a reward by repeatedly buying products
from a particular vendor. In one prior proposal, the
purchaser is provided with a magnetic card which stores
data representing a points score. The score is increased
each time products are purchased from the vendor
operating the scheme. Where a threshold value has been
reached, the purchaser is given a reward, such as a prize
or a discount on further purchases.

It is an object of the present invention to provide
an improved retailing system of particular application to
loyalty schemes.

The invention provides a retailing system
comprising tokens which represent purchasers, storage
means operable to store accumulated data derived from
transactions executed by a purchaser, and terminal means
comprising data processing means operable to receive data
identifying a transaction and operable to determine how
accumulated data is to be modified in accordance with
identifying data which is received.

Each token may comprise storage means operable to store accumulated data corresponding to the purchaser represented by that token. The storage means may store data in machine readable form. The storage means may comprise a magnetic or electronic storage medium. The token may be a magnetic card, SMART card or a card bearing data in bar-coded form.

The terminal means may be operable to modify accumulated data stored by a token which is presented, in use, to the terminal means.

The storage means may be associated with the terminal means. The storage means may, in use, store accumulated data corresponding to a plurality of purchases and/or purchasers. The terminal means may be operable, in use, in cooperation with a token, to identify stored accumulated data corresponding to the purchaser represented by the token. The terminal may be operable to read data from the token, the data being unique to the purchaser represented by the token.

The accumulated data may represent a numerical value which may be modified by subsequent transactions in accordance with predetermined criteria. The predetermined criteria may include one or more of the

following:

the nature or value of the or each product to which the transaction relates;

the total value of products purchased from a predetermined group of products;

the total value of the transaction;

the method of payment used in the transaction;

the number of units of each product in the transaction.

The terminal means may be operable to compare identifying data with predetermined data stored in second storage means associated with the terminal means, the result of the comparison being used to determine the required modification of the accumulated data.

The identifying data may identify a product being purchased and is preferably compared with predetermined data which indicates whether or not the accumulated data is to be modified in response to the purchase of the identified product. The predetermined data may comprise

identifying data for comparison, and tariff data which determines how the accumulated data is to be modified.

The terminal may be operable to receive instructions from a purchaser to modify the details of the transaction and simultaneously to modify the accumulated data. The terminal means may be operable to provide a discount or other benefits in return for a corresponding modification of the accumulated data.

The terminal means may comprise means operable by a purchaser to effect at least some of the operations provided by the terminal means. The terminal means may be operable by a purchaser to cause a discount voucher or other document to be printed. This may be in return for a corresponding modification of the accumulated data.

The terminal means may form part of or be associated with an EPOS system. The terminal means may receive identifying data from an EPOS system. The identifying data may be derived from a bar-code reader. The terminal means may comprise a read/write means operable to read data from a token and to write data to a token. The terminal means may comprise a history store operable to record details of all transactions identified to the terminal means.

The invention also provides a retailing method in which tokens are used to represent purchasers, storage means store accumulated data derived from transactions executed by a purchaser, and terminal means comprising data processing means receive data identifying a transaction and determine how accumulated data is to be modified in accordance with identifying data which is received.

Each token may comprise storage means operable to store accumulated data corresponding to the purchaser represented by that token. The storage means may store data in machine readable form. The storage means may comprise a magnetic or electronic storage medium. The token may be a magnetic card, SMART card or a card bearing data in bar-coded form.

The terminal means may be operable to modify accumulated data stored by a token which is presented, in use, to the terminal means.

The storage means may be associated with the terminal means. The storage means may, in use, store accumulated data corresponding to a plurality of purchases and/or purchasers. The terminal means may be operable, in use, in cooperation with a token, to

identify stored accumulated data corresponding to the purchaser represented by the token. The terminal may be operable to read data from the token, the data being unique to the purchaser represented by the token.

The accumulated data may represent a numerical value which may be modified by subsequent transaction in accordance with predetermined criteria. The predetermined criteria may include one or more of the following:

the nature or value of the or each product to which the transaction relates;

the total value of products purchased from a predetermined group of products;

the total value of the transaction;

the method of payment used in the transaction;

the number of units of each product in the transaction.

The terminal means may compare identifying data with predetermined data stored in second storage means

associated with the terminal means, the result of the comparison being used to determine the required modification of the accumulated data.

The identifying data may identify a product being purchased and is preferably compared with predetermined data which indicates whether or not the accumulated data is to be modified in response to the purchase of the identified product. The predetermined data may comprise identifying data for comparison, and tariff data which determines how the accumulated data is to be modified.

The terminal may be operable to receive instructions from a purchaser to modify the details of the transaction and simultaneously to modify the accumulated data. The terminal means may be operable to provide a discount or other benefits in return for a corresponding modification of the accumulated data.

The terminal means may comprise means operable by a purchaser to effect at least some of the operations provided by the terminal means. The terminal means may be operable by a purchaser to cause a discount voucher or other document to be printed. This may be in return for a corresponding modification of the accumulated data.

The terminal means may form part of or be associated with an EPOS system. The terminal means may receive identifying data from an EPOS system. The identifying data may be derived from a bar-code reader. A read/write means may be used to read data from a token and to write data to a token. A history store may be operable to record details of all transactions identified to the terminal means.

One example of the implementation of the invention will now be described in more detail, with reference to the accompanying drawing which is a schematic diagram of a retailing system according to the present invention.

The retailing system 10 illustrated in the drawing uses tokens 12, only one of which is shown. Each token will represent a single purchaser or group of related purchasers, but there may be more than one token representing a particular purchaser or group. The token 12 may be any form of token capable of identifying the corresponding purchaser but is preferably a portable token on which data can be written, such as a magnetic stripe card, SMART card, or bar-coded card. "SMART" cards are well known in themselves, and incorporate electronic data storage means to which data may be written or read.

The system also incorporates storage means which
may be incorporated in the token 12, or provided
elsewhere in the system, as will be described. The
storage means are operable to store accumulated data
derived from transactions executed by a purchaser.
Terminal means based around a loyalty terminal 14
comprises data processing means operable to receive data
at 16, the data identifying a transaction being executed
by a purchaser. The terminal 14 is also operable to
determine how the accumulated data is to be modified in
accordance with the identifying data which has been
received.

In more detail, the loyalty terminal 14 provides
data processing facilities and is associated with a
keyboard 18, a read/write head 20 and an optional printer
22. The terminal 14 is connected at 16 to an EPOS
(Electronic-Point-Of-Sale) system 24 which is
conventional in itself and incorporates a bar-code reader
26 which can read bar-codes from purchased products 28.

A data store 30, preferably in the form of a look
up table, provides data used by the system. The table 30
may be connected to the EPOS 24 or the loyalty terminal
14.

The other apparatus shown in the drawing allows the
operation of the system to be embellished in various ways
but it is helpful first to explain the basic operation of
the apparatus so far described.

In this example, the token 12 incorporates a data
store such as a magnetic or electronic store. The token
is normally carried by the purchaser. When the
purchasers wishes to make a purchase, the token is handed
to the vendor who uses the read/write head 20 to allow
the terminal 14 to read data from the token 12. This
data is created as a result of previous transactions
executed by the purchaser. For security and marketing
reasons, the token or data will also usually identify the
purchaser, but it is sufficient for the token merely to
represent the purchaser, e.g. by containing or
identifying accumulated data reflecting the purchasing
history of that purchaser.

The bar-codes on the or each purchase 28 are then
read by the bar-code reader 26 in conventional manner to
allow the EPOS system to generate a bill for the
purchaser, again in conventional manner. However, the
EPOS system also provides data to the terminal 14, this
data identifying the product or products being purchased.
For instance, the bar-code data may be passed directly to

the terminal 14 by the EPOS system 24. The terminal 14
then makes a decision about how to modify the accumulated
data on the token 12, as a result of the purchase being
made. This decision is made by consulting the contents
of the look-up table 30. This may simply convert the
bar-code data to a points score to be added to the score
represented by the accumulated data. Alternatively, the
table 30 may identify a tariff rate for the product, that
is, the rate at which points are to be awarded per
monetary unit of the product value. Alternatively, the
decision can be based on any other criteria appropriate
to the aims of the retailing scheme, including one or
more of the following:

the nature or value of the or each product being
purchased.

the total value of products purchased from a
predetermined group of products.

the total value of the transaction;

the method of payment used in the transaction;

the number of units of each product purchased.

The choice of criteria will affect the nature of the information required to be provided from the EPOS system 24. Other information can be provided by the operator, from the keyboard 18.

Once the EPOS system 24 indicates that the transaction is complete, the terminal 14 writes the modified accumulated data to the token 12, which then includes data corresponding to a points score increased by the recent purchase in accordance with the various tariffs and values currently applying to the purchases which have been made. The system is therefore very flexible in allowing special promotions, such as bonus points for buying particular products on particular days, or for buying different sizes of product or for buying products in various catagories such as foodstuffs or non-foodstuffs, or products of particular manufacturers.

Thus, if the purchaser buys a particular product being promoted on that day, the terminal 14 will receive data identifying that product and will be informed by the look up table 30 that the appropriate tariff rate awards points at a high rate, or that a large number of bonus points are to be awarded. The accumulated data will therefore be modified by a substantial increase, to reward the purchaser for selecting that product. Another

product may be less strongly promoted, in which case the table 30 will indicate a lower tariff rate, or lower number of bonus points. Other products may not be part of the promotional scheme at all, in which case the table 30 will indicate that no modification of the accumulated data is required. Changes to the scheme can be made simply by changing the data in the store 30.

In a basic arrangement, the purchaser will accumulate points stored on the token 12 until this points score reaches a predetermined threshold value at which point the token 12 may be redeemed for a prize, discount or other incentive.

Other embellishments to the system can be provided, as indicated in the drawings. A second terminal 14A can be provided for use by the purchaser, for instance when first entering the premises. The terminal 14A would provide a more limited range of functions than the terminal 14, but would include a read/write head 20A to allow the purchaser to have the terminal 14A read accumulated data on the token 12. A keyboard 18A allows the purchaser to instruct the terminal 14A to perform a selected function. This may be simply to print or display the points value represented by the accumulated data on the token 12, or details of particular

promotional opportunities available at the time. A
further alternative allows the purchaser to instruct the
terminal 14A to modify the accumulated data by reducing
the points value represented, in return for obtaining a
discount on purchases made at that visit. In order to
achieve this, the terminal 14A would be connected to the
EPOS system 24 to instruct the system 24 to apply the
appropriate discount when the same token is later
presented by the purchaser.

In all of the above examples, the accumulated data
has been carried by the token 12, which is in turn
retained by the purchaser between visits to the vendors
premises. Alternatively, the system may incorporate a
loyalty controller 40 providing various functions, but
incorporating a history store 42 which stores details of
all events executed at either terminal 14,14A, including
the current accumulated data corresponding to each
purchaser. The basic operation of either terminal 14,14A
can then be essentially the same as that described above,
except that the accumulated data is read from the
controller 40 once the identity of the purchaser has been
determined from the token 12, rather than the accumulated
data being read from the token 12. Once the accumulated
data has been modified, it is sent back to the controller
40 for storage, rather than being stored on the token 12.

The use of the controller 40 and store 42 allows
the operator of the system to gain valuable additional
information. For instance, patterns in purchasing habits
can be detected, such as repeat purchases of a particular
product as part of a promotional scheme. The controller
40 could operate in conjunction with the terminal 14 to
scan the purchasing history of the purchaser to provide
additional bonuses such as bonus points when a particular
product has been purchased a selected number of times.
The information stored in the controller 40 also allows
full details of all operations to be analysed for sending
bills to promoters using the scheme, such as
manufacturers who have paid to have their products
promoted by the award of bonus points.

The presence of the controller 40 and the storage
of the past history also allows the terminal 14A to alert
a purchaser to particular purchases which would be to his
or her advantage, for instance by indicating that another
purchase of a particular product would yield a
multiple-purchase bonus, or to indicate the number of
points required in the forthcoming purchase if the
threshold for redeeming the token is to be reached.

Various modifications may be made to the system and
apparatus described above, without departing from the

scope of the present invention. In particular, the various elements of the system can be implemented in any appropriate technology. The look-up table 30 has been described in conjunction with the terminal 14, but could be incorporated in the EPOS system, for instance as an extension of the conventional price look-up file held in the EPOS system. In that case, the EPOS system would merely indicate to the terminal 14A how the accumulated data is to be modified, but it is expected to be easier to incorporate this system into existing retailed premise if the look-up table 30 is associated with the terminal 14, so that no modification of the EPOS system is required.

The system has been described solely in relation to bar-codes being used to identify products being purchased, but any other input device could be used instead, such as a manual keyboard through which identifying information can be entered by an operator.

Furthermore, the system has been described in relation to retailing, with reference to the user as a purchaser, but other applications may be appropriate. For instance, bank customers could be given incentives according to the nature of transactions completed at the bank, even if these are not purchases.

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

CLAIMS

1.   A retailing system comprising tokens which represent purchasers, storage means operable to store accumulated data derived from transactions executed by a purchaser, and terminal means comprising data processing means operable to receive data identifying a transaction and operable to determine how accumulated data is to be modified in accordance with identifying data which is received.

2.   A system according to claim 1, wherein each token comprises storage means operable to store accumulated data corresponding to the purchaser represented by that token.

3.   A system according to claim 1 or 2, wherein the storage means stores data in machine readable form.

4.   A system according to any preceding claim, wherein the storage means comprise a magnetic or electronic storage medium.

5.   A system according to any preceding claim, wherein the token is a magnetic card, SMART card or a card bearing data in bar-coded form.

6.   A system according to any preceding claim, wherein the terminal means is operable to modify accumulated data stored by a token which is presented, in use, to the terminal means.

7.   A system according to claim 1, wherein the storage means are associated with the terminal means.

8.   A system according to claim 7, wherein the storage means, in use, stores accumulated data corresponding to a plurality of purchases and/or purchasers.

9.   A system according to claim 1, 7 or 8, wherein the terminal means is operable, in use, in cooperation with a token, to identify stored accumulated data corresponding to the purchaser represented by the token.

10.   A system according to claim 1 or any of claims 7 to 9, wherein the terminal is operable to read data from the token, the data being unique to the purchaser represented by the token.

11.   A system according to any preceding claim, wherein the accumulated data represents a numerical value which may be modified by subsequent transactions in accordance with predetermined criteria.

12.   A system according to claim 11, wherein the
predetermined criteria include one or more of the
following:

the nature or value of the or each product to which
the transaction relates;

the total value of products purchased from a
predetermined group of products;

the total value of the transaction;

the method of payment used in the transaction;

the number of units of each product in the
transaction.

13.   A system according to any preceding claim, wherein
the terminal means is operable to compare identifying
data with predetermined data stored in second storage
means associated with the terminal means, the result of
the comparison being used to determine the required
modification of the accumulated data.

14.   A system according to any preceding claim, wherein
the identifying data identifies a product being

purchased.

15. A system according to claim 14, wherein the identifying data is compared with predetermined data which indicates whether or not the accumulated data is to be modified in response to the purchase of the identified product.

16. A system according to claim 15, wherein the predetermined data comprises identifying data for comparison, and tariff data which determines how the accumulated data is to be modified.

17. A system according to any preceding claim, wherein the terminal is operable to receive instructions from a purchaser to modify the details of the transaction and simultaneously to modify the accumulated data.

18. A system according to claim 17, wherein the terminal means is operable to provide a discount or other benefits in return for a corresponding modification of the accumulated data.

19. A system according to any preceding claim, wherein the terminal means comprise means operable by a purchaser to effect at least some of the operations provided by the

terminal means.

20.   A system according to claim 19, wherein the terminal means are operable by a purchaser to cause a discount voucher or other document to be printed.

21.   A system according to claim 20 wherein printing occurs in return for a corresponding modification of the accumulated data.

22.   A system according to any preceding claim, wherein the terminal means form part of or be associated with an EPOS system.

23.   A system according to claim 22, wherein the terminal means receive identifying data from an EPOS system.

24.   A system according to claim 22 or 23, wherein the identifying data is derived from a bar-code reader.

25.   A system according to any preceding claim, wherein the terminal means comprise a read/write means operable to read data from a token and to write data to a token.

26.   A system according to any preceding claim, wherein

the terminal means comprises a history store operable to record details of all transactions identified to the terminal means.

27.   A retailing system substantially as described above, with reference to the accompanying drawings.

28.   A retailing method in which tokens are used to represent purchasers, storage means store accumulated data derived from transactions executed by a purchaser, and terminal means comprising data processing means receive data identifying a transaction and determine how accumulated data is to be modified in accordance with identifying data which is received.

29.   A method according to claim 28, wherein each token comprises storage means operable to store accumulated data corresponding to the purchaser represented by that token.

30.   A method according to claim 28 or 29, wherein the storage means stores data in machine readable form.

31.   A method according to any of claims 28 to 30, wherein the storage means comprise a magnetic or electronic storage medium.

32.   A method according to any of claims 28 to 30,
wherein the token may be a magnetic card, SMART card or a
card bearing data in bar-coded form.

33.   A method according to any of claims 28 to 30,
wherein the terminal means is operable to modify
accumulated data stored by a token which is presented, in
use, to the terminal means.

34.   A method according to claim 28, wherein the storage
means are associated with the terminal means.

35.   A method according to claim 34, wherein the storage
means, in use, store accumulated data corresponding to a
plurality of purchases and/or purchasers.

36.   A method according to claim 28, 34 or 35, wherein
the terminal means are operable, in use, in cooperation
with a token, to identify stored accumulated data
corresponding to the purchaser represented by the token.

37.   A method according to claim 28 or any of claims 34
to 36, wherein the terminal is operable to read data from
the token, the data being unique to the purchaser
represented by the token.

38.   A method according to any of claims 28 to 37,
wherein the accumulated data represents a numerical value
which may be modified by subsequent transaction in
accordance with predetermined criteria.

39.   A method according to claim 38, wherein the
predetermined criteria include one or more of the
following:

the nature or value of the or each product to which
the transaction relates;

the total value of products purchased from a
predetermined group of products;

the total value of the transaction;

the method of payment used in the transaction;

the number of units of each product in the
transaction.

40.   A method according to any of claims 28 to 39,
wherein the terminal means compare identifying data with
predetermined data stored in second storage means
associated with the terminal means, the result of the

comparison being used to determine the required
modification of the accumulated data.

41.   A method according to any of claims 28 to 40,
wherein the identifying data identifies a product being
purchased.

42.   A method according to claim 41, wherein the
identifying data is compared with predetermined data
which indicates whether or not the accumulated data is to
be modified in response to the purchase of the identified
product.

43.   A method according to claim 42, wherein the
predetermined data comprises identifying data for
comparison, and tariff data which determines how the
accumulated data is to be modified.

44.   A method according to any of claims 28 to 43,
wherein the terminal is operable to receive instructions
from a purchaser to modify the details of the transaction
and simultaneously to modify the accumulated data.

45.   A method according to claim 44, wherein the
terminal means is operable to provide a discount or other
benefits in return for a corresponding modification of

the accumulated data.

46.   A method according to any of claims 28 to 45, wherein the terminal means comprise means operable by a purchaser to effect at least some of the operations provided by the terminal means.

47.   A method according to claim 46, wherein the terminal means are operable by a purchaser to cause a discount voucher or other document to be printed.

48.   A method according to claim 47, wherein printing is in return for a corresponding modification of the accumulated data.

49.   A method according to any of claims 28 to 48, wherein the terminal means form part of or be associated with an EPOS system.

50.   A method according to claim 49, wherein the terminal means may receive identifying data from an EPOS system.

51.   A method according to any of claims 28 to 50, wherein the identifying data is derived from a bar-code reader.

52.   A method according to any of claims 28 to 51, wherein a read/write means is used to read data from a token and to write data to a token.

53.   A method according to any of claims 28 to 52, wherein a history store may be operable to record details of all transactions identified to the terminal means.

54.   A retailing method substantially as described above.

55.   Any novel subject matter or combination including novel subject matter disclosed, whether or not within the scope of or relating to the same invention as any of the preceding claims.

Patents Act 1977 r 'miner's report to the Comptroller under Section 17 (ⁱne Search report)	Application number GB 9300682.3
Relevant Technical Fields , (i) UK Cl (Ed.M) G4T (TBX)	Search Examiner G NICHOLLS
(ii) Int Cl (Ed.5) G07G 1/12, 1/14	Date of completion of Search 22 FEBRUARY 1994
Databases (see below) (i) UK Patent Office collections of GB, EP, WO and US patent specifications. (ii) ONLINE DATABASE: WPI	Documents considered relevant following a search in respect of Claims :- 1-54

Categories of documents

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P: Document published on or after the declared priority date but before the filing date of the present application.

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&: Member of the same patent family; corresponding document

Category	Identity of document and relevant passages		Relevant to claim(s)
X	EP 0253240 A1	(OMRON) whole document	1-6,9-12,18, 22,23,25, 28-33,36-39, 45,49,50
X	WO 93/08546 A1	(BONOVITACOLA) whole document	1,3-5,7-12, 22,23,25,28, 30-32,34-39, 49,50,52
X	US 5117355	(MCCARTHY) whole document	1,3-5,7-12, 18,22,23,28, 30-32,34-39, 45,49,50

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